



Missouri Department of Natural Resources

## Total Maximum Daily Load Information Sheet

### Little Muddy Creek and Tributary to Little Muddy Creek

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#### Waterbody Segment at a Glance:

**County:** Pettis  
**Nearby Cities:** Sedalia  
**Length of impairment**

- **Little Muddy Creek:** 0.7 mile
- **Tributary:** 0.4 mile

**Pollutant:** Temperature  
**Source:** Tyson Foods Inc.



State map showing location of watershed

**TMDL Priority Ranking:** TMDL Completed 2001

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#### Description of the Problem

##### Beneficial uses of Little Muddy Creek and Tributary

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption

##### Use that is impaired

- Protection of Warm Water Aquatic Life

##### Standards that apply

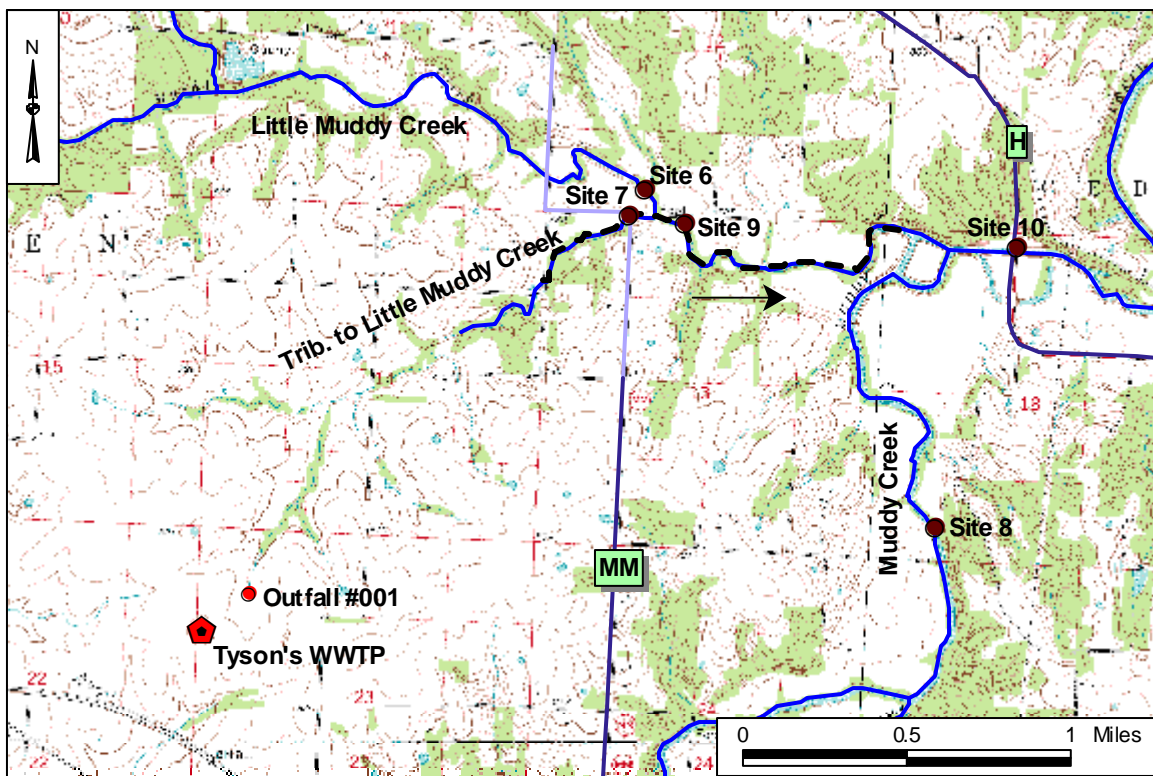
- Missouri's Water Quality Standards 10 CSR20-7.031(D)(1) state that "Water contaminant sources or physical alteration of the stream shall not raise or lower the water temperature more than 5° F [2.8° C], or contribute to a stream temperature in excess of 90° F [32° C]."

Excess temperature in a water body is considered a pollutant that is harmful to the aquatic life that inhabits the stream. Tyson Foods Inc., a poultry-processing plant, discharges treated wastewater into a tributary to Little Muddy Creek. The Missouri Department of Conservation conducted a water quality study of Muddy Creek and selected tributaries between April 1997 and April 1998. The data from the grab samples collected for this study shows that water temperatures in the tributary exceeded those in Little Muddy Creek *upstream* of the tributary by more than 5° F on 41 of 55 sampling dates (data attached is recorded in °C). This means that in 74 percent of the samples, state standards for water temperature were exceeded. Another portion of the study included

collection of temperature data every thirty minutes using a continuous monitoring sampler. Using this method, 4042 out of 6890 samples or 58.7 percent exceeded state water quality standards.

In the TMDL study, natural heating of the stream by sunlight was ruled out as the cause of the temperature variations, as were any other background influences. The TMDL recommends that temperature limits be added to Tyson's discharge permit, along with specified in-stream monitoring points (locations where temperature data is to be collected on a daily basis). The U.S. Environmental Protection Agency approved this TMDL January 12, 2001. The permit was reissued July 2003 with monitoring requirements. The temperature limits will become effective July 2005. A map of the area and a graph of the grab sample data may be found below.

### Little Muddy Creek and Tributary to Little Muddy Creek in Pettis County, Missouri, with Sampling Sites Identified



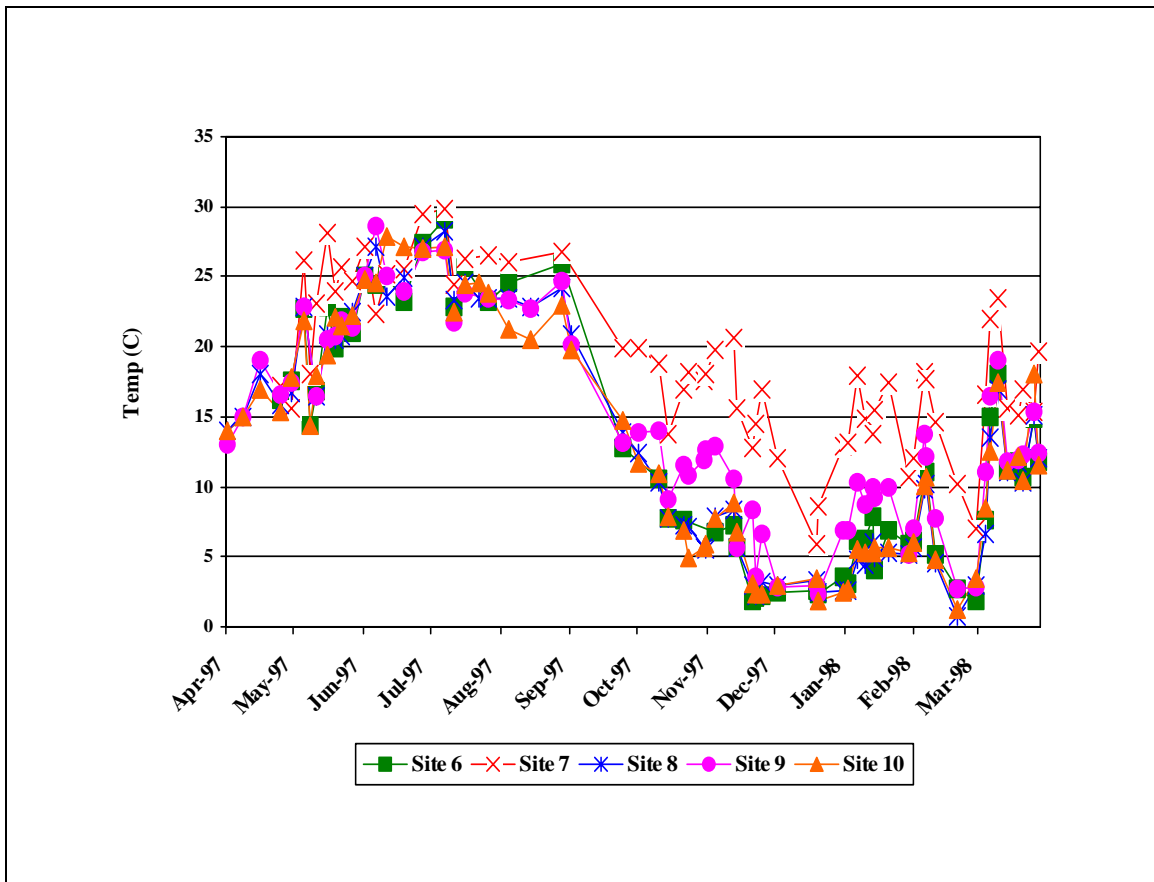
--- Impaired segment

→ Direction of flow

#### Site Index

- 6 – Little Muddy Creek upstream of the tributary
- 7 – Tributary to Little Muddy Creek at Hwy. MM
- 8 – Muddy Creek upstream of L. Muddy Creek
- 9 – Little Muddy Creek downstream of tributary
- 10 – Muddy Creek at Hwy. H

## Grab sample temperatures in Muddy Creek, Little Muddy Creek, and the tributary to Little Muddy Creek, April 1997-March 1998



Source: Missouri Department of Natural Resources.

### For more information call or write:

Missouri Department of Natural Resources

Water Protection Program

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